Vocabulary Activities

Directions

The following activities are designed to help students learn new vocabulary words by providing multiple exposures to the words in different contexts. Include additional words as applicable. Choose words that are appropriate, given the stated goals of each activity.

Suggested Words

- Product
- Factor
- Multiple
- Divisor
- Dividend
- Commutative property
- Equals
- Quotient
- Distributive property

Instructional Materials

Material	Quantity	Description
Master	2 per pair or small group	2-Cube Challenge
Master	1 per student	Mystery Word
Wipe board	1	What Word?
Master	Several, depending on size of *Jeopardy!* Board	*Jeopardy!*
Handout Chips/markers	1 per student Several per student	MATH
Handout	1 per student	Crossword Puzzle
Handout	1 per student	Vocabulary Map
Handout	1	Pyramid Template
Hanger (optional) Long piece of butcher paper (optional) Marker	1 1 1	Word Wall

Instructional Materials (cont.)

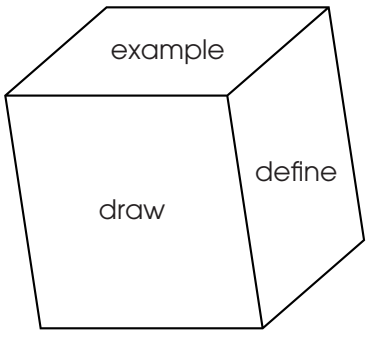
Material	Quantity	Description
Overhead projector or wipe board Paper or math journals Pencil	1 1 per student 1 per student	Writing Prompts
Handout	1 per student	KWLH Chart
Master	1 per group	Starter Cube
Master	1 per student	Ticket In/Out
Handout	1 per student	Word Identifying

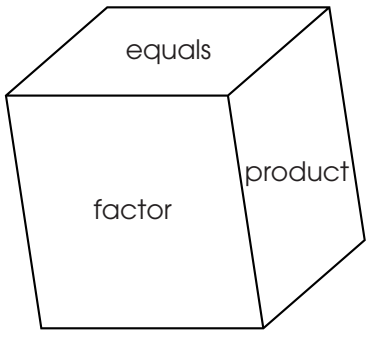
Activities

Activity 1: 2-Cube Challenge (Bay-Williams & Livers, 2009)

1. Prepare 2 number cubes for each pair of students or each small group, using the 2-Cube Challenge master.
2. Write the following words on each face of the first cube:
   - Draw
   - Define
   - Describe
   - Synonyms
   - Antonyms
   - Examples

   Write 6 appropriate vocabulary words on the faces of the second cube.
3. Working in pairs or small groups, students take turns rolling the number cubes.
4. Students take turns completing the task (draw, define, describe, etc.) for each word they roll.





Activity 2: Mystery Word (Bay-Williams & Livers, 2009)

1. Give each student a card from the Mystery Word master. Words will probably be used more than once.
2. Without looking at the card, students will place it facing outward on their forehead.
3. Students then circulate, asking one another up to 3 questions that will help them determine what word they have. (For example, "Is my word a part of a fraction?")

Additional activity: Students are given mystery numbers. They must ask other students questions about their number, using the words, "multiple," "factor," "less than," and "more than" to determine what the number is. (For example, "Is my number a multiple of 5? Is it less than 30?")

Activity 3: What Word?

1. Choose 1 student to be the guesser. The guesser stands in front of the board and faces the class.
2. Write a word on the board or wipe board behind the guesser so he or she cannot see the word, but the rest of the class can.
3. 1 at a time, the rest of the class provides 1-word hints to the guesser until he or she can name the word.
4. Continue with multiple rounds. Students take turns being the guesser.

Activity 4: Vocabulary Jeopardy!

1. Create Jeopardy! game cards, using the Jeopardy! master.
2. Assign a point value on the back (e.g.: 100, 200, 300). Tape the cards to the board with the question hidden.

Variation: To create a unit review, make additional topic rows on index cards that could include the following:

a) Cards with problems to solve

b) Cards containing problems that students must discuss a strategy on how to solve the problem. For example: Take apart 3s into 1s and 2s.

3. Split the class into 2 teams. Each team must choose a representative who will

raise his or her hand and give the team's answer. The teacher will keep score.

Variation: The representative can change for each question, moving down the row so every student has an opportunity to answer a question.

4. Follow regular Jeopardy! rules: 1 team chooses the category and point value of the question. The teacher reads the question. The student who raises his or her hand first gets the first opportunity to answer the question in question form. ("What is a factor?") If a student from the first team answers the question incorrectly, a student from the other team gets a chance to answer the question.
5. The team with the most points after the board has been cleared wins.

TEACHER NOTE
This is a version of BINGO. The students create their own game boards.

Activity 5: MATH

1. Distribute the blank MATH handout.
2. Read the vocabulary words aloud and have students insert the words where they choose on their game board, leaving 1 space as the free space. Place the definitions of the words into a hat or container.

TEACHER NOTE
The words provided will not create a full game board. To create a full game board, include additional vocabulary words students are having difficulty learning.

Example:

M	A	T	H
ratio	fraction	product	dividend
plus	rate	factor	multiple
commutative property	divisor	**free space**	minus
quotient	set	equals	sum

3. Draw and read aloud a definition of a word. Students must identify the word that matches the definition and place the chip/marker over the correct word. Keep the definitions and the words as they are drawn and read.

4. The first student who has 4 in a row yells "MATH" and upon confirmation (as in regular BINGO) has won the game.

5. To continue this game, students can switch game boards once a student has called MATH.

Activity 6: Crossword Puzzle

1. Distribute the blank Crossword Puzzle handout.

2. To make it a game, time students or challenge students to see who can complete the crossword puzzle fastest.

Variation: Keep a running tally to see who is fastest across all units and deem the student "Vocab Master."

Activity 7: Vocabulary Map (Harmon, Hedrick, & Wood, 2005)

1. Distribute the Vocabulary Map handout.

2. Have students pick a word from a list and fill out the map.

Example:

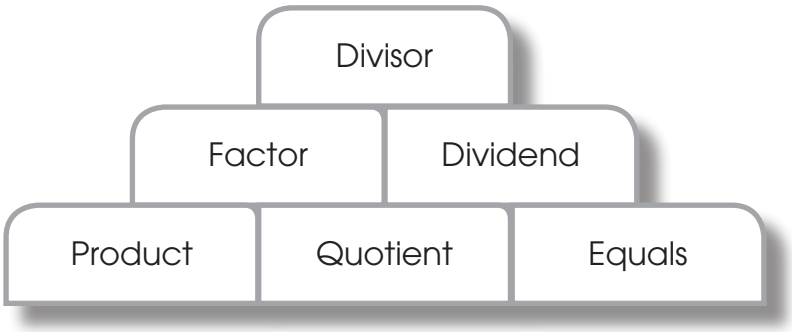
Equals	
Definition Is the same as	**Use It in a Sentence** 5 times 5 equals 25.
Example $\frac{6}{3} = 2$	**Nonexample** $7 = 3 \times 4$

Variations: Allow students to draw their word from a hat.
Allow students to work in small groups.

3. Have students share and discuss in small groups or as a class.

Activity 8: $10,000 Pyramid (Bay-Williams & Livers, 2009)

1. Create a pyramid shape (use PowerPoint or the Pyramid Template handout) containing 6 vocabulary words—for example:



2. Project or post the pyramid on the wall. Have 1 partner face the pyramid while the other faces away.
3. The partner facing the pyramid chooses a word on the bottom row and gives 1 hint at a time (verbal or illustrated) until the other partner guesses the word correctly.
4. Partners start on the bottom row and work up through all the words on the pyramid. The game can be timed for added challenge.
5. Create a second pyramid for the partner, and repeat steps 2–4.

Activity 9: Word Wall (Bromley, 2007; Rubenstein & Thompson, 2002)

1. Provide a space on the wall to create a Math Word Wall. If space is limited, tape a long piece of butcher paper to a hanger to hang in the classroom.
2. Ask for input from students about words that should go on a word wall and create 1 together.
3. Include the word, as well as a picture, the definition, or any other piece of information that would be beneficial and reinforcing to students.

Activity 10: Writing Prompts (Rubenstein & Thompson, 2002)

1. Use appropriate opportunities to allow students to write about new concepts they have learned. This can be used as a math journal, warm-up, or "bell" activity before the lesson begins. Make it a requirement to use a certain number of vocabulary

words.

2. Writing prompts could include:

   Give a scenario and ask students how they will solve it.

   Examples:

   - Imagine you are teaching a second-grader about multiplication. Explain what multiplication is, using language he or she would understand. Draw pictures to accompany your explanation.
   - Write a letter to a friend explaining division.

   Ask students to describe how to perform a mathematical equation.

   Example:

   - Describe how you would solve the following problem, using pictures.
     Joe has 36 books. He wants to give an even amount of books to each of his 4 friends. How many books will each friend get?

3. Read student responses to note any misconceptions.

Activity 11: KWLH Chart (Ogle, 1989)

1. Create a word bank of vocabulary terms for students to use in completing a KWLH chart.
2. Distribute a blank KWLH Chart handout to each student.
3. Have students use the provided word bank to complete the "Know" and "What" columns of the KWLH chart to demonstrate their prior knowledge of the concept. Use this activity at the beginning of instruction on a new concept.
4. Have students share and discuss their responses with a partner. Allow students to make additions and changes to their KWLH chart.
5. Create a class KWLH chart on chart paper with the information the students provide.
6. Throughout the unit, provide students the opportunity to complete the "Learned" and "How" columns of their KWLH chart, discussing any changes and additions they make with a partner.

   Example: Students start the KWLH chart during the Engage section of Lesson

3 and complete the KWLH chart at the end of Lesson 10 to journal what they know, what they have learned, how they have learned it, and a summary of their understanding of division.

7. Record all new information on the class KWLH chart.

Activity 12: Starter Cube

1. Prepare a Starter Cube, using the Starter Cube master, for each group of 3 students.
2. Create a Starter Cube, using sentence starters to summarize key ideas or vocabulary words for the lesson or unit.

   Examples:

   - The relationship between multiplication and addition is...
   - The expressions 4 x 6 and 6 x 4 are equal because...
   - The relationship between multiplication and division is...
   - The commutative property is...
   - Arrays are used to...
   - Multiplication and division are similar because...
3. Have students take turns rolling the Starter Cube and completing the rolled sentence starter.

Activity 13: Ticket In/Out

1. Create a Ticket In/Out by placing a problem and a writing prompt on the Ticket In/Out master. Provide students with a word bank to use when answering the writing prompt.

   Example: Create an array to solve 24 ÷ 6. Justify how your array could be used to solve the division problem.
2. Distribute the created Ticket In/Out to each student.

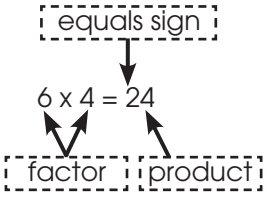
Word Bank	
Product	Array
Factor	Dividend
Quotient	Partitioning

3. Have students complete the problem to demonstrate their understanding of the concept.
4. Have students share and discuss their justification with a partner.
5. If needed, have students use a different color pencil to make any changes to their work.

Activity 14: Word Identifying

1. Distribute the Word Identifying handout.
2. Have students fill in the correct vocabulary to demonstrate their understanding of the concept.

   Example:



3. Have students verify their work with a partner.

Resources

Bay-Williams, J. M., & Livers, S. (2009). Supporting math vocabulary acquisition. *Teaching Children Mathematics, 16,* 238–246.

Harmon, J. M., Hedrick, W. B., & Wood, K. D. (2005). Research on vocabulary instruction in the content areas: Implications for struggling readers. *Reading and Writing Quarterly, 21,* 261–280.

Ogle, D. M. (1989). The know, want to know, learn strategy. In K. Muth (Ed.), *Children's comprehension of text* (pp. 205–223). Newark, DE: International Reading Association.

Rubenstein, R. N., & Thompson, D. R. (2002). Understanding and supporting children's mathematical vocabulary development. *Teaching Children Mathematics, 9*(2), 107–112.